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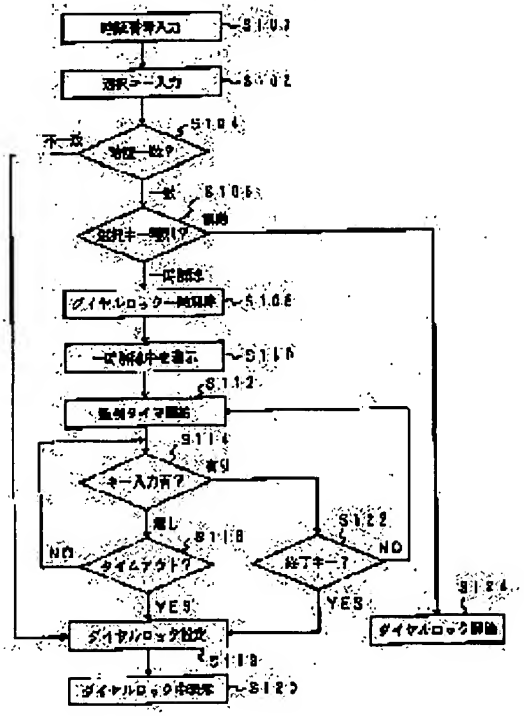
(54) DIAL LOCK RELEASE METHOD FOR MOBILE COMMUNICATION TERMINAL EQUIPMENT

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a dial lock release method for mobile communication terminal equipment provided with a dial lock function excellent in functionality and operability.
SOLUTION: First a registered password at dial lock setting is entered (S100), and a release method desired to be executed is selected by a selection key of 'release' or 'temporal release' (S102). When the password is coincident, either the 'release' or the 'temporal release' is executed according to the type of selection key (S106). When the selection key is the 'temporal release' key, dial lock is temporarily released (S108) and when time-out takes place (S114, S116), dial lock is set (S108). When an end key is operated before the time expires (S112), dial lock is set. When the selection key in the step S102 is the 'release' key, dial lock is released (S124).



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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to a mobile telecom terminal and the dial lock discharge approach [in / more specifically / a mobile telecom terminal].

[0002]
[Description of the Prior Art] The problem that were one side of the convenience that he can carry easily mobile telecom terminals, such as a cellular phone and a PHS terminal, and can telephone even from where, and it was used improperly by the third person according to mislaying, a theft, etc. might arise. In order to prevent such an unauthorized use, the mobile telecom terminal equipped with the dial lock function which prevents from performing dial actuation of submission operation etc. by the third person is developed and sold.
[0003] When the mobile telecom terminal equipped with the dial lock function performs a dial lock, a dial lock is made into an established state with a predetermined function key, and a dial lock is performed by keying a personal identification number etc. Moreover, when canceling a dial lock, a dial lock is changed into a discharge condition with a predetermined function key, and a dial lock is canceled by keying the personal identification number when performing a dial lock.
[0004] Once it cancels a dial lock in the case of such a dial lock function, a lock will be performed if a dial lock is not performed again. For this reason, when it lost by mislaying etc. after canceling a dial lock, there was a problem that it might be used improperly by the third person.
[0005] If there is no fixed time amount key input which is in it after canceling a dial lock to JP,10-23530,A in order to solve such a problem for example, the conventional technique of the migration terminal equipped with the function to perform a dial lock automatically is indicated. That is, with this conventional technique, since it changed in the dial lock condition automatically when it lost by mislaying etc. in the state of dial lock discharge, and a certain fixed time amount key input could not be found, there was an advantage that the unauthorized use by the third person could be prevented.
[0006]
[Problem(s) to be Solved by the Invention] However, with such a conventional technique, there come to be a means to cancel the dial lock function itself although

not indicated clearly, and a means to operate an automatically lockable function as it is indicated by the specification text, when a fixed time amount key input is not performed after discharge in the specification text, in discharge actuation. Therefore, a different key stroke as a separate independent function had to perform each discharge processing starting.

[0007] That is, with the above-mentioned conventional technique, since it was the function which discharge actuation became independent of, the user needs to recognize a key stroke which is different to each, and the discharge condition according to a user's hope was not able to be easily specified according to the spot. Moreover, in an automatically lockable function, since it did not change in the dial lock condition if fixed time amount progress is not carried out, an automatically lockable setup was not able to be performed immediately.

[0008] This invention solves the technical problem of such a conventional technique, and it aims at offering the dial lock discharge approach in the mobile telecom terminal equipped with the dial lock function excellent in functionality and operability.

[0009]

[Means for Solving the Problem] In the dial lock discharge approach in the mobile telecom terminal equipped with the dial lock function which locks a dial so that dial actuation may not be performed unjustly in order that this invention may solve an above-mentioned technical problem The alter operation of the personal identification number which cancels this dial lock during a dial lock setup, If alter operation of the selection key of which the selection key or dial lock of which a dial lock is canceled is canceled temporarily is performed, collating of the inputted personal identification number is performed, and if this personal identification number is right as a result, dial lock discharge will be carried out by discharge discharge or temporarily when alter operation was performed.

[0010]

[Embodiment of the Invention] Next, with reference to an accompanying drawing, the gestalt of operation of the dial lock discharge approach in the mobile telecom terminal by this invention is explained to a detail. Reference of drawing 3 shows the gestalt of operation of the mobile telecom terminal by this invention, i.e., the functional block diagram of the mobile telecom terminal equipped with the dial lock function which locks a dial so that dial actuation may not be performed unjustly.

[0011] The mobile telecom terminal by the gestalt of this operation is equipped with the display 64 which consists of LCD which displays the condition of the various information and the terminal unit which were inputted as the microcomputer (MPU) 50 which controls the whole terminal unit concerned, the key-stroke section 60 which performs the telephone number, a dial lock setup or a setup of the various modes of operation accompanying discharge, etc., and E2 PROM62 where the data set up by users, such as a personal identification number, are saved from the key-stroke section 60. In addition, in the condition that the dial lock is set up, while the key mark which is a dial lock mark is displayed, in for example, under "momentary discharge" of the dial lock mentioned later, the alphabetic character which shows this is displayed by this display 64.

[0012] The terminal unit concerned is equipped with the vibrating motor 66 which this equipment is vibrated and tells arrival of the mail again at the time of arrival of the mail, the antenna 68 which receives the electric wave from a base

station, or transmits the electric wave to a base station, the RF circuit 70 which performs RF transmitting processing or RF reception to the sound signal and data signal which are transmitted and received through an antenna 68, a loudspeaker 72, and a microphone 74. The terminal unit concerned is equipped with the AF circuit 76 which carries out AF processing of the sound signal inputted from the microphone 74, and is outputted to the RF circuit 70 while it carries out AF processing of the input signal by which RF reception was carried out in the RF circuit 70 further and it carries out a voice output from a loudspeaker 72.

[0013] MPU50 is constituted by the interior with CPU51, ROM52, RAM53, the clock 54, I/O Port 55, and the timer 56. CPU51 operates synchronizing with the clock supplied from a clock 54, and performs specified processing using RAM53 which stores operation data and external information based on the program which specifies the procedure of the terminal unit concerned stored in ROM52 of operation. It connects with each component other than MPU50 through I/O Port 55, and CPU51 performs a predetermined function by performing transfer of a signal or data again.

[0014] Specifically, CPU51 will set up a dial lock according to the program stored in ROM52, if the key stroke which performs a dial lock setup inputted from the key stroke section 60 is detected. If it detects that the personal identification number for canceling a dial lock in the condition that the dial lock is set up again was inputted, and the selection key of "discharge" or "momentary discharge" was inputted after this personal identification number, CPU51 collates a personal identification number, and if this is right, it will perform "discharge" of a dial lock or "momentary discharge." Further, in "momentary discharge", CPU51 starts a timer 56, and supervises key input existence to it.

[0015] Drawing 1 is a flow chart illustrating the dial lock discharge approach by the gestalt of this operation when canceling such a dial lock. Hereafter, the dial lock discharge approach in the mobile telecom terminal by the gestalt of this operation is explained to a detail using drawing 1 and drawing 3 .

[0016] When canceling the dial lock set up beforehand, the personal identification number first registered at the time of a dial lock setup is inputted (S100). Next, the discharge approach to perform by the selection key of "discharge" or "momentary discharge" is chosen (S102). In addition, a "function key", an "off-hook key", "a key on hook", or specific "dialing key" can be used for the selection key of "discharge" or "momentary discharge."

[0017] CPU51 will collate "coincidence" of this personal identification number or an "inequality", if one input of the selection keys of "discharge" or "momentary discharge" is detected after a personal identification number (S104). If a personal identification number is in agreement as a result of this collating, CPU51 will perform either "discharge" or "momentary discharge" according to the classification of the selection key inputted at step S102 (S106). On the other hand, if the personal identification number is inharmonious, it will carry out by continuing a dial lock (S118), and the purport which is [dial] under lock will be displayed on a display 64 (S120).

[0018] It returns to step S106, and when the selection key inputted at step S102 is "discharge", CPU51 cancels a dial lock (S124). On the other hand, when the selection key inputted at step S102 is "momentary discharge", CPU51 cancels a dial lock temporarily (S108), and displays the display under discharge on a display 64 temporarily (S110). And by starting a timer 56, CPU51 performs watchdog timer

initiation (S112), and measures time amount without a key input.
[0019] And after watchdog timer initiation, if there is no time amount which the key input set up beforehand (S114, S116) (i.e., if it becomes a time-out in the condition without a key input), a dial lock will be set up (S118) and the purport which is [dial] under lock will be displayed on a display 64 (S120). Moreover, if an end key is operated even if it does not become the time-out of step S116 (S122), a dial lock will be set up as well as the processing at the time of being a time-out (S118), and the purport which is [dial] under lock will be displayed on a display 64 (S120).
[0020] Moreover, the telephone directory with which phase hand names, such as an acquaintance, the telephone number, etc. are memorized is read from memory. When the dial dispatch key was operated after retrieval / selection in the phase hand from the time of searching by a phase hand name etc., the telephone directory, etc., and carrying out dial dispatch and there is a key input (S114), If an end key is operated after retrieval of a telephone directory or a phase hand and message termination (S122), a dial lock will be set up (S118) and the purport which is [dial] under lock will be displayed on a display 64 (S120).
[0021] Drawing 2 is the flow chart which enabled it to change a personal identification number into the flow chart shown in drawing 1 during discharge temporarily [dial lock]. The flow chart shown in drawing 2 adds step S130 and step S132 to steps S100-S124, and the part is illustrated in drawing 2 . Therefore, in drawing 2 , the same reference mark is described at the same processing as drawing 1 .

[0022] In drawing 2 , if this key input is modification of a personal identification number when there is a key input (S114) (S130), a dial lock will be set up, after performing modification processing to a new personal identification number (S132) (S118). Moreover, in modification of a personal identification number, there is nothing, and if a key input is an end key (S122), it will set up a dial lock like drawing 1 (S118). Moreover, selection of modification of said personal identification number may add step S130 and step S132 which canceled the dial lock temporarily and were mentioned above at step S106 which added and mentioned selections above in step S102 mentioned above, and may make a dial lock setup perform after a password changed number.
[0023] Drawing 4 shows the example of 1 display of the screen displayed on the display 64 in the gestalt of operation shown in drawing 1 . A mobile telecom terminal when the dial lock is set up awaits screen 64a, and it shows the condition at the time. As shown in screen 64a, in this condition, the dial lock mark (key mark) which shows that the dial lock is set up with a receive state with a base station, the capacity of a cell or a date, time amount, etc. is displayed on a display 64 just under a receive state with a base station.
[0024] If "****" which is the four-digit personal identification number which the user set up beforehand is inputted and the selection key of "discharge" is pressed as shown in screen 64b in this condition, if the personal identification number is correct, a success sound will be outputted, as shown in screen 64c, a dial lock mark will disappear, and a dial lock will be canceled. On the other hand, when the personal identification number is wrong, it returns to the dial lock condition which outputs an error sound and is shown in screen 64a. Moreover, if "****" which is the four-digit personal identification number which the user set up beforehand is

inputted and the selection key of "momentary discharge" is pressed, if the personal identification number is correct, a success sound will be outputted, and as shown in 64d of screens, the alphabetic character of "momentary discharge" will be displayed on a display 64.

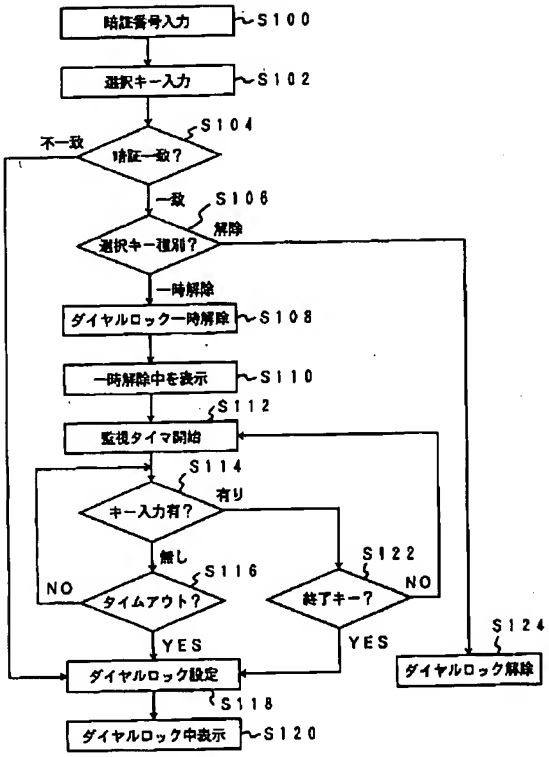
[0025] In addition, the gestalt of the operation explained here explains this invention, there is no this invention what is not necessarily limited to this, and the deformation and the correction in which this contractor is possible are included under the category of this invention, without deviating from the pneuma of this invention.

[0026]

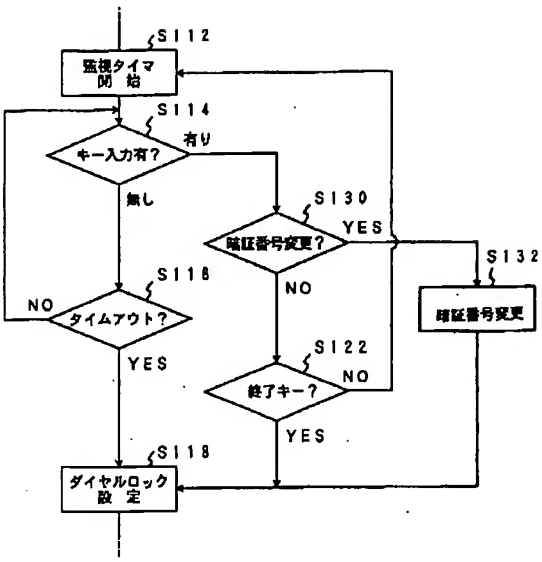
[Effect of the Invention] Thus, since the discharge approach of a dial lock can be specified by classification of the selection key following a personal identification number according to the dial lock discharge approach in the mobile telecom terminal of this invention, the user only keeps the selection key in mind in a series of operating procedure, and does not have the need of memorizing different starting actuation for every discharge approach. Moreover, it can change in the dial lock condition by one-touch, without waiting for an automatically lockable time-out. Furthermore, since that is displayed when it is under discharge temporarily, it is possible to check a discharge situation easily at a glance.

[Translation done.]

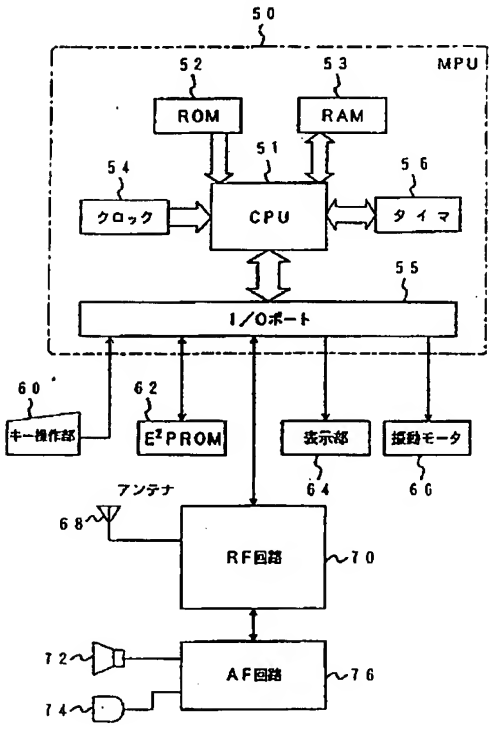
【図1】


暗証番号入力
S100
選択キー入力
S102
S104
不一致
暗証一致?
一致
S106
解除
選択キー種別?
一時解除
ダイヤルロック一時解除
S108
一時解除中を表示
S110
S112
監視タイマ開始
S114
有り
キー入力有?
無し
S116
NO
タイムアウト?
YES
S122
終了キー?
NO
YES
S124
ダイヤルロック解除
ダイヤルロック設定
S118
ダイヤルロック中表示
S120

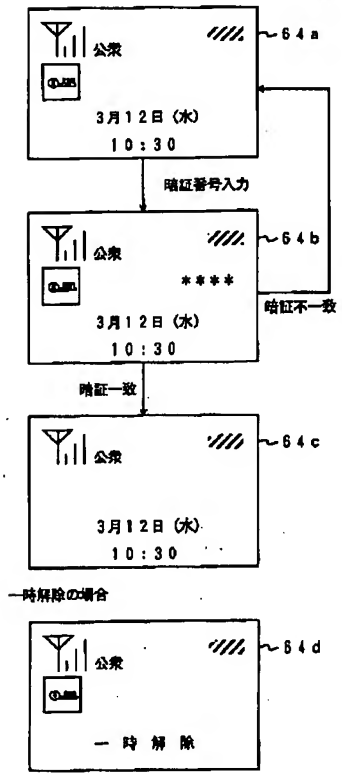
【図2】


S112
監視タイマ
閉 始
S114
有り
キー入力有?
無し
S130
YES
暗証番号変更?
S132
暗証番号変更
NO
S118
NO
タイムアウト?
YES
S122
NO
終了キー?
YES
S118
ダイヤルロック
設 定

【図3】


50
MPU
52
ROM
53
RAM
51
54
クロック
CPU
56
タ イ マ
55
I/Oポート
60
キー操作部
62
E²PROM
表示部
64
振動モータ
66
アンテナ
68
RF回路
70
72
74
AF回路
76

【図4】


公衆
64a
3月12日（水）
10：30
暗証番号入力
公衆
64b
****
3月12日（水）
10：30
暗証不一致
暗証一致
公衆
64c
3月12日（水）
10：30
一時解除の場合
公衆
64d
一 時 解 除